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ABSTRACT

This paper discussed a stage theory of childhood, preadolescent, and adolescent concepts of role-relationships and social reasoning in friendship. It was hypothesized that these concepts develop through levels of perspective-taking, within which individuals view and structure interpersonal relationships. At level one, relationships are based on one person's subjective evaluation of interpersonal acts and on that person's perception of the consequences of others' actions for his own expectations. At level two, relationships are based on situation or context-specific, reciprocal expectations of both parties. At level three, relationships are based on the generality or temporal continuity of mutual expectations of each party across situations or contexts. At level four, relationships are based on the underlying deeper meaning each party gives to the other's behavior and on the underlying understanding each party has of the complexity of the other's values and beliefs. The horizontal correspondences among perspective-taking level, level of persons conceptions, and level of relations conceptions were examined at levels two and three. A series of open-ended, standardized questions was used to elicit preadolescent, adolescent, and adult solutions to commonplace interpersonal dilemmas. Some of the data from preadolescent subjects were analyzed and related to the proposed stage theory of role-relationship perception. (Author/BRT)

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Interpersonal thought in childhood, preadolescence, and adolescence: a structural analysis of developing conceptions of peer relationships

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Paper presented at the 1975 Convention of the American Psychological Association.

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Part 1: Introductory perspective on social cognition

Over the past decade there has been an increasing acceptance of and interest in research whose focus is developmental changes in conceptions of social reality. While Piagetian theory can take credit for stimulating much of the recent empirical activity in this area, more important and prior influences can be traced to the emphasis put on the social and ethical aspects of mental development stressed by James Mark Baldwin (1906) and George Herbert Mead (1934). In particular, Mead stressed that the origins of intelligence were cast in the social experience of the child, and that the developing human capability to take the self's attitude from the perspective of other(s) was the core element of social development. Unfortunately, Mead's philosophical concern with the relation of social cognition (mind), social development (self), and social relations (society), while genuinely developmental, offered little in the way of methodological framework within which to study the relations among these phenomena.

In our attempt to fit Mead's emphasis on perspective-taking into a developmental framework, we have turned to criteria first clearly articulated by Baldwin,[1] later adopted by Piaget (1970) in his studies of logical structures, and still later by contemporary theorists, such as Kohlberg (1968), in the study of social cognition and development.

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[1]For a fascinatingly clear articulation of the structural-developmental approach, see Volume 1, pages 1-27, of Baldwin's Thoughts and things: a study of the development and meaning of thought or Genetic logic (Macmillan, 1906).

Psychologists who study the logical or structural aspects of developing social concepts and processes need to consider three basic issues in their research:

1) First, which aspects or categories of social experience are worthy of study from a structural developmental framework.

2) Second, what is the relation of a given area of social reasoning to logical cognition, to the cognition of physical and mathematical concepts, and to other conceptual areas of social experience.

3) Third, what, if any, is the nature of the correspondence between social reasoning and actual social relations; how can such relationships be conceptualized

I would like to discuss our own research project as it bears upon the first of the above issues.[1] A major emphasis on this project is the study of stages in the development of interpersonal relationship concepts, and, in particular, developing conceptions of role-relationships such as peer relationships, parent-child relationships, group relationships, authority relationships, sibling relations, societal relations, etc. Today we will focus on the development of conceptions of a particular role-relationship: friendship, friendship concepts in childhood, preadolescence, and adolescence.

Our current study of the development of interpersonal relationship concepts is based on our previous studies of the developmental characteristics of the process of social perspective taking and of procedures for its assessment in various contexts. Whereas Mead and later Kohlberg stressed the core social nature of perspective taking, neither has ventured further to specify and describe a fuller structural-developmental picture of this process. Our earlier work has been an attempt to do so (Selman, in press, Selman & Byrne, 1974).

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[1] Time does not permit the discussion of our research as it pertains to the second and third issues, the relations of interpersonal concepts to either logico-physical or moral reasoning (issue two), or our study of the comparison of the performances on our measures of children with severe interpersonal problems and children who are better adjusted (issue three). Details of these studies can be found in The Second Annual Progress Report of the Harvard-Judge Baker Social Reasoning Project, available from the author.

By pointing out that this analysis is structural-developmental, we mean to stress that our interest is in the formalistic aspects of how the child comes to know the relation between the perspectives of self and other(s) (and, here, how this relates to his reasoning about interpersonal role-relationships).[1] The criteria for accepting a phenomena as structural developmental are now familiar: qualitative differences between stages, hierarchical-logical relations among stages, invariant sequential development through stages, and structural integrity within stages. Each level of knowing is logically based on the prior level but qualitatively distinct insofar as it is a reorganization of and an addition to the prior level. The following paragraphs describe levels we have observed in the development of social perspective taking.

At level one, the child overcomes his prior egocentrism and is able to clearly differentiate the subjective perspectives of self and other; he begins to understand that even under the same circumstances, other people's thoughts and feelings may be the same as or different from his own, or that others may think differently about social events depending upon the information available to them. That is to say, all people have subjective interpretive abilities.

At level two, the child incorporates this awareness into a new realization. Now viewing both the self and other as subjects, he realizes that other can view self as a subject in reciprocal coordination with self's view of other as a subject. This generates an awareness that in considering other's viewpoint, one must include other's perspective on the self's own inner views.

At level three, the preadolescent is able to step back from the reciprocal coordination of perspectives, and comes to realize that there is a reality to the infinite regress nature of interpsychic subjectivity. With this logical extension in mind, the preadolescent constructs a new and qualitatively distinct third person view which is

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[1] It also bears clarifying that the interest of this kind of investigation is in the structure of the child's reasoning about social realities, rather than the content or changes in content of specific attitudes or beliefs.

inclusive of the reciprocal dyad perspective, and from which is generated a concept of mutuality of perspectives.

At level four, the adolescent generates multiple third person perspectives which abstract out as a societal perspective, a group perspective, the total of which is greater than the sum of the parts. At this level, the subject can compare and qualitatively contrast sets and types of perspectives.

As described, these levels appear logically to be developmental. And yet, although they deal with the social content of human perspectives, they are extremely formal by nature. Furthermore, although the perspective taking levels are viewed as real, not as hypothetical constructs, they represent a process and are real only as they operate in some social context. In other words, to be psychologically interesting, observable, and useful, social perspective taking levels as social cognitive structures must search for a context, a category or categories of social experience to which they can be applied. The particular context may lead to some variation in the rate of development of the domain reasoned about, but not to variation of the order of development.

Our first working hypothesis, one which guides the rest of this presentation, is that the social perspective taking levels defined in our previous research provide the structure of stages of developing conceptions of interpersonal role-relationships.

Part 2: Procedures for the study of developing conceptions of interpersonal relationships: peer friendship concepts

To study developing conceptions of friendship relations, we have used a semi-structured verbal interview procedure in which children, adolescents, and adults, are encouraged to exercise their interpersonal concepts in the process of resolving commonplace interpersonal dilemmas. To facilitate the expression and assessment of each subject's highest level of conceptualization (in particular the reasoning of preadolescent subjects ages six to twelve), a one-to-one interview follows the viewing of an audio-visual presentation of the dilemma. (Preadolescent actors present the

story on color-sound filmstrips of approximately eight minutes duration.)

In our prototypical dilemma, the general theme of which is empathy in peer relationships, a drama is portrayed in which a young boy, Tom, is trying to decide what present to buy his friend, Mike, who will be given a surprise birthday party the next day. Tom, by chance, meets Mike on the street and learns that Mike is extremely upset that his pet dog, Pepper, has been lost for two weeks: in fact, Mike is so upset that he tells Tom, "I miss Pepper so much, I never want to look at another dog again." Tom goes off, only to pass a store with a sale on puppies; one or two are left and these will soon be gone. The dilemma, then, is whether to buy the puppy for Mike's birthday and how the chosen action will influence the friendship relation.

For this and three similar interpersonal dilemmas, we ask a series of open-ended but standardized probe questions which are designed to elicit the subject's reasoning about specified categories within the domain of interpersonal relationships. We have defined two categories which are basic across all relationships: these are (1) conceptions of persons, and (2) conceptions of relations (here, friendship relations in particular). In addition to our basic hypothesis that perspective taking levels are the logical structure which underlies stages in conceptions of interpersonal relationships, our second basic hypothesis is that the development of these two basic categories of interpersonal relationship conceptions, conceptions of persons and of relations, can each be characterized as developing through levels which are structurally isomorphic and develop psychologically in close synchrony with one another.

I will attempt to substantiate these two hypotheses in three ways. First, I will briefly sketch out developmental stages for each of these two categories and the subcategories within each. Second, I will examine at two stages the horizontal correspondences among perspective-taking level, level of persons conceptions, and level of relations conceptions in order to substantiate the claim of structural relations. Third, I will report some of the results from the initial phase of our research on social and logical reasoning in preadolescent subjects.

A. Stages in developing conceptions of Persons and Relations

Within the persons category we define three subcategories, each of which is defined and assessed by a separate set of probe questions.

The first subcategory in person conceptions is subjectivity, the developing conception of subjective mental content, the nature of thoughts, feelings, motives, etc. of persons. For example, responses to the question, "Can Mike be both happy and sad at the same time if he gets a new puppy for a gift?", are responded to with denials prior to stage one. Our youngest subjects deny the possibility because they assume persons are either happy or sad, but not both at the same time. To be both is seen as a physical impossibility, like being in two places at the same time. Only one subjective state is possible at one time. At stage 1, the child can conceive of conflicting mental content within the same person but not toward the same social object of thought. Mike can be sad about the lost puppy and at the same time happy about getting a new one. At stage 2, there can be conflicting feelings within the self towards an object, but these feelings are segregated from one another. It is not until stage 3 that a single object or act can be seen to arouse truly mixed mental contents, mixed feelings or motives; and it is not until stage 4 that it is seen that mixed feelings can generate a synthesis, which leads to a new mental content qualitatiavely distinct from either mental content from which it was derived (e.g., "The new dog may make Mike feel kind of melancholy, both happy and sad, because it stirs up old memories").

Our second subcategory of persons conceptions is labelled self awareness; it refers to the subject's ability to reflect upon his own inner subjectivity. Subjects with stage 1 conceptions of persons respond to self awareness probes such as, "Does Mike really mean it when he says he never wants to see another puppy again?", by taking Mike's response at face value. Although aware that persons can deceive others about their overt actions (having taken a cookie, one can say he did not), stage 1 subjects do not see that deception with regard to the inner thoughts or feelings of self is possible. At stage 2, the child becomes aware that self's inner subjectivities can be obscured from

others but does not believe they can be obscured from the self. At stage 3, the self can be fooled but only if one does not focus on or pay attention to one's own behavior; self-deception is a matter of giving something enough thought. It is not until stage 4 that the adolescent invents "unconscious" explanations for psychological behavior.

The third subcategory of person conceptions is the developing conception of personality. In response to the question, "What kind of person is Mike, the boy who lost his dog?", a question which is made more meaningful by the depiction of Mike on the sound filmstrip, a typical stage 1 response reflects an awareness of personality in terms of specific actions, e.g., "Mike is a boy who has lost his puppy." At stage 2, one's personality is still characterized in terms of specific actions but these actions are related to the responses of other persons to the self's actions, e.g., "He is a boy who wants the other kids to feel sorry for him." At stage 3, persons are described in terms of simple traits which reflect a new conception of personality based on a coordination of individual actions over time, a conglomerate view of personality, a mind viewing the self's many parts. At stage 4, persons and personalities are seen as complex and oftimes conflicting systems of values, beliefs, and attitudes.

In the relations conceptions category, the standard questions we ask about friendship relations reflect an interest in the developing conceptions of the dynamics of all relationships; five such sub-categories are defined, and here illustrated with examples from the specific relationship of friendship.

1) formation - how do persons get to be friends.

2) induction - on what basis does one decide to let another person be a friend.

3) maintenance - what factors are important to the continuation of friendships.

4) exclusion - on what basis do persons reject others as friends.

5) termination - what factors contribute to the breaking up of friendships.

In the sample dilemma, the probe question, "If Tom brings Mike a new puppy for his birthday and Mike does not like it, will they still be friends?", is oriented to the elicitation of the subject's concepts of maintenance and/or termination of friendship.

At stage one, friendships are maintained on the basis of an uneven-handed reciprocity; a reciprocity between the specific overt social actions of one actor and the subjective evaluation of these specific social actions by the other; Mike's displeasure at receiving a new puppy is grounds enough for the termination of the friendship at this stage.

At stage two, friendship relations are construed as both parties' reciprocal attitudes toward each other. There is a sense of the necessity of cooperation in the service of each party's self interest. However, relationships are context specific; they are still terminated relatively easily in the face of specific negative incidents, but just as friendships dissolve easily, they can be readily reconstituted.

It is not until stage 3 that the particular actions of friends are seen as predicated on the nature of the general relationship rather than the reverse. Friendships are seen to be maintained for the mutual concern of both parties rather than for the reciprocal interest of each. Just as relations are now seen as mutual systems, they also have a constancy over time; the strength of the relation is in part a function of this temporal component and in part a function of the common interests of both parties. Also characteristic of this stage is a distinction between kinds of friends based on the quantitative amount of common interest or mutual concern that the partners have.

At stage 4, friendships are conceptualized as being qualitatively different from one another. Close friendships are more than quantitatively distinct types, they are qualitatively distinct; intimate relations go beyond the common interests of stage 3 to a sharing of deeper psychological meaning. As one adolescent subject said. "Friendship is sharing intimate secrets at 3:00 A.M. with Clearasil on your face."

B. Horizontal structural correspondences

In the above analysis we have defined subcategories within the categories of conceptions of persons and relations, and given capsule descriptions of stage developmental aspects of each. Such a procedure is based on the assumption that there is some structure which integrates all categories at each stage. This assumption requires both logical and empirical evidence.

Logically, we make the argument that each perspective-taking level provides the structural basis for each of the interpersonal relationship conceptions stages. Let us take stages 2 and 3 as examples. At level 2 perspective-taking, the child realizes that one's perspective on others must take account of other's perspective on the self. In the persons category, this corresponds to the awareness that the self can conceal his own inner subjective reality from other's view. Similarly, this leads to an orientation to (dyadic) relations which is based on a concern for reciprocal subjective attitudes (e.g., "We're good friends because he likes me and I like him"). The context specific nature of stage 2 interpersonal relationship conceptions is also a function of the limitation of level 2 perspective taking; because the child cannot coordinate perspectives from a third person viewpoint, he is unable to step outside the relation to see it as a mutually functioning system rather than a series or sequence of moment-to-moment sets of social actions.

The reciprocity of stage 2 turns to mutuality in preadolescence at stage 3 as a function of the level 3 third person perspective. This third person perspective on persons concepts allows the preadolescent to view both the inner and outer aspects of his own psychological behavior as a complete system, and leads to the notion of the observing ego, the idea of a mind viewpoint which can coordinate the self's ability to be reflective on itself. Persons can get outside of themselves and view their actions as representations of systems of traits or psychological dispositions. The third person perspective in relationship conceptions is also the

basis for the transformation of peer relations from strict reciprocity to mutual concern and understanding. Whereas at stage 2 a good relation required good intentions on the part of each party, at stage 3 good mutual intentions are assumed on the basis of there being a good ongoing relationship. It is interesting to note that Harry Stack Sullivan (1953) identified similar behavioral shifts in the nature of interpersonal relations from childhood to preadolescence; a shift from a cooperation based on self interest to collaboration based on shared feelings and mutual interest.

C. Empirical approaches to the issue of interpersonal relationship stage

It is most important to the structural developmental approach to attempt to demonstrate that, indeed, within the subject, these different stage conceptions for each category do indeed hang together at the same or adjacent stages and are more than logical fiction. We wish to demonstrate that if a child has a stage one conception of persons, he is likely to have a stage one or two conception of relations. Wide variations in stage conceptions across categories or even across tasks would be a severe embarrassment to any structural developmental claims.

I would like to report some data now available from our project, the general aim of which is the study of patterns of development among various domains of logical and social reasoning in normal and interpersonally maladjusted children and preadolescents. A major emphasis of this project is to validate our techniques for the assessment of the interpersonal relationship conceptions as well as to examine subjects' performance on these measures in relation to performance on measures of perspective taking.

In one study (Selman, in preparation), 48 boys, twelve each from grades 1, 2, 5, and 6, were interviewed on the four interpersonal dilemmas, and on two measures of perspective taking, one adopted from Flavell (1968) and the other developed by Selman and Byrne (1974), to assess level of perspective taking in the context of socio-moral dilemmas.[1] Also administered were two logico-physical measures adopted from Piaget and Inhelder (1958) and used to assess Piagetian cognitive stage. For each area scored, the child's highest level of performance was used for subsequent comparative analysis across domains.

1. Stage characteristics of categories within the domain of Interpersonal Relationship Conceptions

The interpersonal relationship conceptions measure was scored for overall stage in two ways: first, all four dilemmas were scored for each of the forty-seven subjects; second, each of the four dilemmas was scored separately from one another across all forty-seven subjects. The correlational matrix generated by comparing scores for each dilemma under both procedures ranged from .68 to .88. Using the second procedure, one which is less amenable to bias in scoring from one dilemma or task to the next, the correlations among dilemmas ranged from .61 to .85. This speaks well for the claim to generality of stage across tasks. Only two of the forty-seven subjects had scores among the four tasks at a greater distance than adjacent stages.

A similar procedure was used to assess the internal consistency between persons and relations categories. The overall correlation between scores in each category for all dilemmas was .89. We took one dilemma and first scored the standard probes designed to assess person concepts across all subjects and then went back at a later time and scored all subjects for (dyadic) relations concepts. The correlation between categories was .71. Table 1 presents a cross tabulation analysis of the highest stage for each category within subjects. 88% of the 47 subjects' scores were at the hypothesized structurally parallel stages across the two categories. The other 12% were one stage higher on the persons category.

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[1] One subject's interviews proved unscoreable.

Insert table 1 here

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2. Characteristics of the Interpersonal Conceptions - perspective taking relationship

We found a significant correlation of interpersonal relationship stage to grade level of .60 and to perspective-taking of .68. The significant correlation between interpersonal relationship conceptions and perspective taking was maintained with grade, mental age, and Piaget cognitive stage partialled out.

The cross tabulation of the highest level of performance across the domains of perspective-taking and interpersonal relationship concept stage for each of the forty-seven subjects suggests that the highest level of perspective taking as manifested in separate social context measures emerges at the same time or prior to the assumed structurally parallel level of interpersonal relationship conception (see Table 2). These data, although psychological in nature, are also somewhat suggestive of the necessary but not sufficient logical relation of level of perspective taking for structurally parallel interpersonal reasoning stage (in which interpersonal stage implies perspective taking level but perspective taking does not imply interpersonal stage). Insofar as no subject had a higher performance on the interpersonal stage than on the assumed parallel perspective taking level, the data are supportive, though certainly not conclusive, with regard to this assertion.

Insert table 2 here

Summary

In trying to understand the basic nature of a subject's conception of interpersonal relations, the question we ask is this: <u>At each level, how does the subject structure interpersonal relations, their meaning and value</u>? Our claim is that each developing level of perspective-taking provides a new organizing principle by which the subject can structure or view interpersonal relationships.

At level one, relationships are based on one party's subjective evaluation of interpersonal acts and on the self's perception of the consequences of other's actions for the self's expectations. At level two, relationships are based on the situation- or context-specific, reciprocal expectations of both parties. At level three, relationships are based on the generality or temporal continuity of mutual expectations of each party across situations or contexts. At level four, relationships are based on the underlying or qualitatively deeper meaning each party gives to each other's behavior and on the underlying common understanding each party has of the complexity of other's values and beliefs, of other's self-system. At each level, one can see both an advance over the previous level, and also a limitation to be resolved at the subsequent level. At level one, there is a consideration of subjectivity, but only of one party. At level two, both parties' subjective views are considered but only in a context-specific framework. At level three, the framework is one which considers reciprocity in general and mutual terms, but only on one plane or level of interpersonal understanding. At level four, mutuality between persons occurs at a range of qualitative levels, but each person is defined as a separate self-system independent of the other.

In closing, I would like to briefly spell out some directions of our research. The data drawn upon are from initial interviews of a longitudinal study; eventually we hope to speak more directly to the issue of the nature of the sequence of stages. Cross cultural research, carefully carried through, would also help us to clarify how well we have differentiated the structural and conceptual aspects of the stages. Both methods will eventually lead to modifications and corrections in the stage descriptions.

We do not claim that our research on interpersonal relationship concepts is preliminary, for in a certain sense all research is preliminary. However, we do insist that it be clear that we are presenting evidence taken during a period of descriptive stage construction, not a period of stage verification. Stage analyses are studies of a broad spectrum of ontogenesis; it may take as long as the ontogenesis of the subject to complete the constructive period of the research endeavor.

References

Baldwin, J. M. Social and ethical interpretation in mental development. New York: Macmillan, 1906.

Baldwin, J. M. Thoughts and things. New York: The Macmillan Co. 1906-1915, Vol. 1-IV (Reprinted by Arno Press, 1975).

Flavell, J., et al. Role-taking and communcation skills in children. New York: John Wiley, 1968.

Kohlberg, L. Stage and sequence: the cognitive-developmental approach to socialization. In Goslin, D. (Ed.), Handbook of socialization: theory and research. New York: Rand-McNally, 1968, 347-380.

Mead, G. H. Mind, self and society. Chicago: University of Chicago Press, 1934.

Piaget, J. Structuralism. New York: Basic Books, 1970.

Piaget, J. & Inhelder, B. The growth of logic from childhood to adolescence. New York: Basic Books, 1958.

Selman, R. & Byrne, D. A structural analysis of levels of role-taking in middle childhood. Child Development, 1974, 803-807.

Selman, R. L. The development of social-cognitive understanding a guide to educational and clinical practice. In T. Lickona (Ed.) Morality: Handbook of theory, research and application. New York: Holt, Rinehart and Winston, in press.

Selman, R. L. A structural-developmental approach to conceptions of interpersonal relationships: studies of normal and disturbed preadolescents. To appear in Pick, A. (Ed.), X Minnesota Symposium on Child Development. Minneapolis: University of Minnesota Press, 1976 (in preparation).

Sullivan, H. S. The interpersonal theory of psychiatry. New York: Norton, 1953.

Table 1

Structural correspondences between Persons and Dyadic Relations categories of Interpersonal (peer) role relationship

Level of Persons Concepts	Level of Dyadic Relation Concept 1	2	3	
1	13	0	0	13
2	4	25	0	29
3	0	1	4	5
	17	26	4	

N = 47 (1 missing)

$X^2 = 67.3$, $p < .001$, 4 df

Table 2

Structural relation between perspective-taking level and Interpersonal relationship stage

perspective-taking level	Interpersonal (peer) relationship stage 1	2	3	4
1	5	0	0	0
2	10	11	0	0
3	1	13	2	0
4	0	3	2	0

$x^2 = 25.7$, $p < .001$, 6 df